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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 5

Complete if Known	
Application Number	10/057,552
Filing Date	January 25, 2002
First Named Inventor	MAYO, Stephen L. et al.
Group Art Unit	1645
Examiner Name	not yet assigned
Attorney Docket Number	A-65353-9/RFT/RMS/RMK

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document Number	Kind Code[2] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	4,939,666		Hardman, K.D.	07/03/1990	
	A2	5,241,470		Lee et al.	08/31/1993	
	A3	5,527,681		Holmes	06/18/1996	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Office[3]	Number[4]	Kind Code[2] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	B1	WO	95/22625	A1	AFFYMAX TECHNOLOGIES N.V.	08/24/1995		
	B2	WO	98/32845	A1	BIOINVENT INTERNATIONAL AB	07/30/1998		
	B3	WO	00/23564	A2	XENCOR, INC.	04/27/2000		
	B4	WO	00/68396	A2	XENCOR, INC.	11/16/2000		
	B5	WO	00/68396	A3	XENCOR, INC.	11/16/2000		
	B6	WO	01/59066	A2	XENCOR, INC.	08/16/2001		
	B7	WO	01/59066	A3	XENCOR, INC.	08/16/2001		

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	C1	Brenner and Berry, A., et al., "A quantitative methodology for the de novo design of proteins", Protein Sci. 3:1871-1882 (Oct. 1994).	
	C2	Borman, "Proteins to Order," Chemical and Engineering Newsletter (C&EN) Oct. 6, 1997, 9-10 (1997).	
	C3	Bowie, J.U., et al., "Deciphering the Message in Protein Sequences: Tolerance to Amino Acid Substitutions", Science vol.247:1306-1310 (Mar. 1990).	
	C4	Bowie, J.U., et al., "A Method to Identify Protein Sequences that Fold into a Known Three-Dimensional Structure", Science vol.253:164-170 (Jul. 1991).	
	C5	Brooks et al., "CHARMM: A Program for Macromolecular Energy, Minimization, and Dynamics Calculations," J. of Computational Chemistry, 4(2):187-217 (1983).	

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	C6	Connolly, M.L., "Solvent-Accessible Surfaces of Proteins and Nucleic Acids", Science vol.221(4612):709-713 (Aug. 1983).	
	C7	Cornell et al., "A Second Generation Force Field for the Simulation of Proteins, Nucleic Acids, and Organic Molecules," J. Am. Chem. Soc., 117:5179-5197 (1995).	
	C8	Dahiyat, B.I., et al., "Automated design of the surface positions of protein helices", Protein Science 6:1333-1337 (Jun. 1997).	
	C9	Dahiyat et al., "Protein design automation," Caltech Biology Annual Report, 172 (1995).	
	C10	Dahiyat, B.I., et al., "Proteins from Scratch", press digest email by Science (Sep. 26, 1997).	
	C11	Dahiyat et al., "Protein Design Automation," Meeting Abstract; Protein Science vol. 4, Suppl. 2, 83 (1995).	
	C12	Dahiyat et al., "Protein design Automation," Poster Sessions, Protein Science vol.5, Suppl. 1, 22-23 (1996).	
	C13	Dahiyat et al., "De Novo Protein Design: Fully Automated Sequence Selection," Science, 278:82-87 (1997).	
	C14	Dahiyat et al., "Probing the Role of Specificity in Protein Design," Caltech Biology Annual Report, 160-161 (1996).	
	C15	Dahiyat et al., "Protein Design Automation," 1996, Protein Science, vol. 5, pp. 895-903, Nov. 30, 1999.	
	C16	Dahiyat, B.I., et al., "First fully automatic design of a protein achieved by Caltech scientists", new press release (Oct. 1997).	
	C17	Dalal, S., et al., "Protein alchemy: Changing .beta.-sheet into .alpha.-helix", Nature Struc. Biol. vol.4(7):548-552 (Jul. 1997).	
	C18	DeGrado, W., "Proteins from Scratch," Science, 278:80-81 (1997).	
	C19	Desjarlais, J.R., et al., "De novo design of the hydrophobic cores of proteins", Protein Science 4:2006-2018 (1995).	
	C20	Desjarlais et al., "New strategies in protein design," Current Opinion in Biotechnology :460-466 (1995).	
	C21	Desmet, J., et al., "The 'Dead End Elimination' Theorem: A New Approach to the Side Chain Packing Protein", from "The Protein Folding Problem and Tertiary Structure Prediction" Ch.10:1-49 (1994).	
	C22	Desmet, J., et al., "The dead-end elimination theorem and its use in protein side-chain positioning", Nature vol.356:539-542 (Apr. 1992).	

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	C23	Desmet et al., "Theoretical and Algorithmical Optimization of the Dead-End Elimination Theorem," Proceedings of the Pacific Symposium on Biocomputing '97, 122-133 (1997).	
	C24	Dunbrack Jr., R.L., et al., "Conformational analysis of the backbone-dependent rotamer preferences of protein sidechains", Struc. Biol. vol.1(5):334-340 (May 1994).	
	C25	Eisenberg, D., et al., "Solvation energy in protein folding and binding", Nature vol.319:199-203 (Jan. 1986).	
	C26	Gallop et al., "applications of Combintorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," Journal of Medicinal Chemistry Vol. 37, No. 9 (April 29, 1994), 1233-1251.	
	C27	Goldstein, R.F., "Efficient Rotamer Elimination Applied to Protein Side-Chains and Related Spin Glasses", Biophys. Jour. vol.66:1335-1340 (May 1994).	
	C28	Gordon et al. "Energy functions for protein design," Curr. Opinion in Struct. Biol., 9:509-513 (1999).	
	C29	Harbury et al., "Repacking protein cores with backbone freedom: Structure prediction for coiled coils," Proc. Natl. Acad. Sci. USA, 92:8408-8412 (1995).	
	C30	Harbury et al., "High-Resolution Protein Design with Backbone Freedom," Science, 282:1462-1467 (1998).	
	C31	Hellinga, H.W., et al., "Construction of New Ligand Binding Site in Proteins of Known Structure", J. Mol. Biol. 222:763-785 (1991).	
	C32	Hellinga, H.W., "Rational protein design: Combining theory and experiment", Proc. Natl. Acad. Sci, USA vol.94:10015-10017 (Sep. 1997).	
	C33	Hellinga, H.W., et al., "Optimal sequence selection in proteins of known structure by simulated evolution", Proc. Natl. Acad. Sci., USA vol.91:5803-5807 (Jun. 1994).	
	C34	Holmes, "First-ever designer protein fits like a glove," New Scientist, IPC Magazines Limited, Oct. 11, 1997 (1997).	
	C35	Hurley et al., "Design and Structural Analysis of Alternative Hydrophobic Core Packing Arrangements in Bacteriophage T4 Lysozyme," J. Mol. Biol., 224:1143-1159(1992).	
	C36	Jones, D.T., "De novo protein design using pairwise potentials and a genetic algorithm", Protein Science 3:567-574 (1994).	
	C37	Koehl et al., "De Novo Protein Design. I. In Search of Stability and Specificity," J. Mol. Biol., 293:1161-1181 (1999).	

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Sheet 4 of 5

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Filing Date	January 25, 2002
First Named Inventor	MAYO, Stephen L. et al.
Group Art Unit	1645
Examiner Name	not yet assigned
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	C38	Kono et al., "Energy Minimization Method Using Automata Network for Sequence and Side-Chain Conformation Prediction from Given Backbone Geometry," Proteins: Structure, Function, and Genetics, 19:244-255 (1994).	
	C39	Kortemme et al., "Design of a 20-Amino Acid, Three-Stranded β-Sheet Protein," Science, 281:253-256 (1988).	
	C40	Lam, Kit S., "Application of Combinatorial Library Methods in Cancer Research and Drug Discovery," Anti-Cancer Drug Design (1997), 12, 145-167.	
	C41	Lasters et al., "Enhanced dead-end elimination in the search for the global minimum energy conformation of a collection of protein side chains," 1995, Protein Engineering, vol. 8, No. 8, pp. 815-822.	
	C42	Lasters, I., et al., "Dead-End Based Modeling Tools to Explore the Sequence Space That is Compatible with a Given Scaffold", Jour. of Protein Chem. vol.16(5):449-452 (Jul. 1997).	
	C43	Lazar et al., "De novo design of the hydrophobic core of ubiquitin," Protein Science 6:1167-1178 (1997).	
	C44	Lee et al., "Accurate prediction of the stability and activity effects of site-directed mutagenesis on a protein core," Nature, 352:448-451 (1991).	
	C45	Lim et al., "The crystal structure of a mutant protein with altered but improved hydrophobic core packing," Proc Natl Acad Sci U S A. 1994 Jan 4;91(1):423-7	
	C46	Mayo et al., "DREIDING: A Generic Force Field for Molecular Simulations," J. Phys. Chem., 94:8897-8909 (1990).	
	C47	Minor Jr., D.L., "Measurement of the .beta.-sheet-forming propensities of amino acids", Nature vol.367:660-663 (Feb. 1994).	
	C48	Munoz, V., et al., "Helix design, prediction and stability", Curr. Opin. in Biotech. 6:382-386 (Aug. 1995).	
	C49	Munoz, V., et al., "Intrinsic Secondary Structure Propensities of the Amino Acids, Using Statistical phi-psi Matrices: Comparison with Experimental Scales", Proteins 20:301-311 (1994).	
	C50	Munoz, V., et al., "Analysis of the effect of local interactions on protein stability", Folding & Design 1(3):167-178 (Apr. 1996).	
	C51	Pabo, C., "Designing proteins and peptides", Nature vol.301:200 (Jan. 1983).	
	C52	Padmanabhan, S., et al., "Relative helix-forming tendencies of nonpolar amino acids", Nature vol.344:268-270 (Mar. 1990).	
	C53	Ponder, J.W., et al., "Use of Packing Criteria in the Enumeration of Allowed Sequences for Different Structural Classes", release by Acad. Press Inc. (London) Ltd. pp.775-791(1987).	

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	C55	Regan, L., "Helix is a helix is a helix?", Proc. Natl. Acad. Sci. USA vol.94:2796-2797 (Apr. 1997).	
	C56	Smith, C.K., et al., "Guidelines for Protein Design: The Energetics of .beta. Sheet Side Chain Interactions", Science vol.270:980-982 (Nov. 1995).	
	C57	Stickle et al., "Hydrogen Bonding in Globular Proteins," (1992) Journal of Molecular Biology, vol.226, pp. 1143-1159.	
	C58	Sun, S., et al., "Designing amino acid sequences to fold with good hydrophobic cores", Protein Eng. vol.8(12):1205-1213 (1995).	
	C59	Tuffery et al., "A New Approach to the Rapid Determination of Protein Side Chain Conformations," J. of Biomolecular Struct. & Dynamics, 8(6):1267-1289 (1991).	
	C60	van Gunsteren et al., "Prediction of the Activity and Stability Effects of Site-directed Mutagenesis on a Protein Core," J. Mol. Biol., 227:389-395 (1992).	
	C61	Villegas et al., "Stabilization of proteins by rational design of .alpha.-helix stability using helix/coil transition theory," Folding & Design, 1(1):29-34 (1995).	
	C62	Wesson et al., "Atomic solvation parameters applied to molecular dynamics of proteins in solution," Protein Science, 1:227-235 (1992).	
	C63	Wilson et al. "Computational Method for the Design of Enzymes with Altered Substrate Specificity," J. Mol. Biol. (1991) 220,495-506.	
	C64	Wodak, S.J., et al., "Analytical approximation to the accessible surface area of proteins", Proc. Natl. Acad. Sci. USA vol.77(4):1736-1740 (Apr. 1980).	

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